

TF050A

AIR BEARING TURBO FANS

FEATURES

- Higher static air pressure due to the high rotational speed of the air-dynamic bearing
- Longest Life by the air-floatation effect of the non-contact air-dynamic bearing
- Compact Size made possible by the ironless-brushless for the motor
- Power-Saving by the ironless-brushless motor technology (no iron loss)
- Low Vibration by using the newly developed turbo blade



APPLICATIONS

- Domestic fuel-cell
- Medical equipment for respiratory systems
- Industrial equipment

PART NUMBER DESIGNATION

TF050A-12WULL-*-FD**

Series name

TF050 : Blade size ϕ 50 mm turbo fan

Rated voltage

12 : 12 V
24 : 24 V

Cover / Direction of port

WU : With cover / Upward port
NN : Without cover

Driving circuit

FD : Fan with driving circuit

Dash number (only for custom-made)

Air pressure & airflow level

LL : Low pressure and low airflow

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SPECIFICATIONS

Item	Specifications	Remarks
Bearing type	Air-Dynamic-Bearing	
Motor type	DC ironless-brushless motors	Excitation : 3 phase bipolar
Rated voltage	DC24 V \pm 10 % DC12 V \pm 10 %	
Rated airflow	100 l/min	at 2.0 kPa
Rated static pressure	2.0 kPa	at 100 l/min
Maximum pressure	3.5 kPa	at 10 l/min
Maximum consumption current	30 W maximum	15 W maximum (Rated steady operation)
Steady current	1.4A maximum (at DC12V) 0.7A maximum (at DC24V)	Rated operation
Maximum input current	5.0A maximum (at DC12V) 2.5A maximum (at DC24V)	Excluding condensor charge at the point of irruption
Rotation speed	Approx 24,000 rpm	At rated point (2 kPa, at 100 l/min)
Weight	Approx. 170g (with cover) Approx. 130g (without cover)	
Noise	55dB maximum	1 m from inlet
Life	ON - OFF : 100,000 times minimum Continuous : 50,000 hours minimum	
Mounting position	Axi-vertical direction is recommended	Mounting face is on the bottom
Insulation class	JIS C 4003 type B (130 °C)	
Insulation resistance	10 M Ω minimum	
Dielectric strength	AC600 V 1 sec.	
Operating temp. range	0 ~ 50 °C (No condensation)	Humidity : 10 ~ 80 %RH
Storage temp.	- 20 ~ 50 °C (No condensation)	Humidity : 10 ~ 90 %RH
Main components	Cover, Case, Blade : PBT + ABS resin with glass (UL94V-0)	

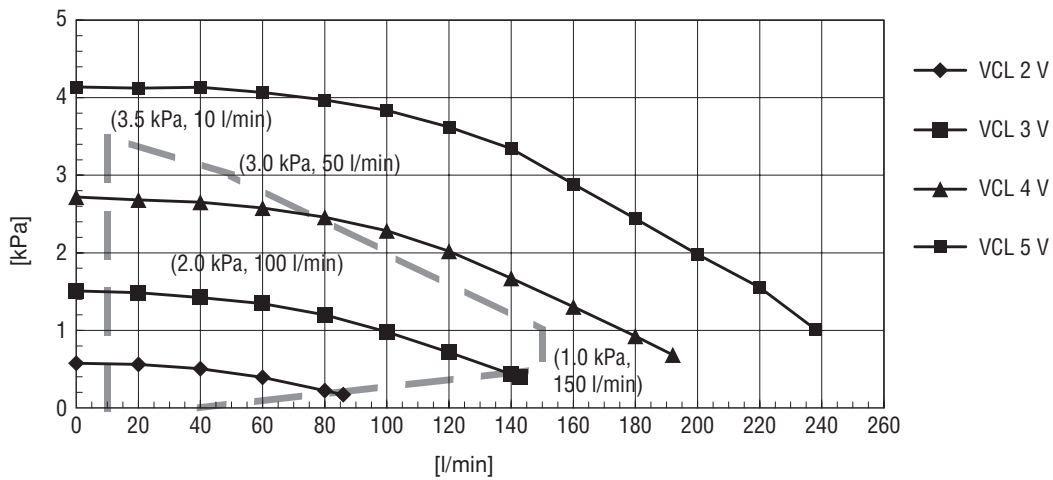
INTERFACE SPECIFICATION

Color	Symbol	Specifications
Blown	GND	0 V ground power input
Red	VCC	+12 V (or +24 V) at power input : \pm 10 %
Orange	CNT	Control voltage input : 1 ~ 5 V
Yellow	FG	24 pulses / rotation (Output circuit : open collector)

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FLOW-PRESSURE CHARACTERISTICS

- 1 The inside area of the broken lines on the below chart is the area for use. Upper limit is on the line passing the following points, (3.5kPa, 10 l/min), (3.0kPa, 50 l/min), (2.0kPa, 100 l/min), (1.0kPa, 150 l/min).
2. Reference value of control voltage (CNT) (at constant flow and at constant air pressure characteristics). Please take some margin for the individual fluctuation.



OUTLINE DIMENSIONS

Unless otherwise specified, tolerance : ± 0.5 (Unit: mm)

